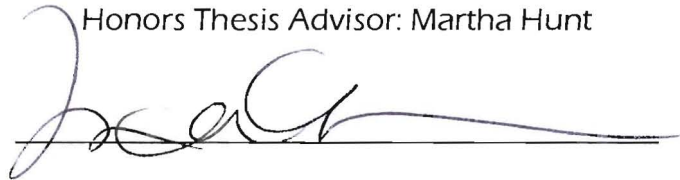


# Extending Education Outdoors: An Educational Landscape for the New Wauseon 3-8 Elementary

An Honors Thesis

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Honors Thesis Advisor: Martha Hunt

A handwritten signature in dark ink, appearing to read 'Martha Hunt', is written over a horizontal line.

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May 2008

Date of Graduation: May 3, 2008

# Extending Education Outdoors

An Educational Landscape for the  
New Wauseon 3-8 Elementary

A photograph of a teacher and three students sitting on a wooden boardwalk in a grassy field, engaged in an outdoor learning activity. The teacher, a woman with dark hair, is leaning over and looking at something in her hands. Three young students are sitting next to her, looking on. The background is a field of tall grass and some trees in the distance.

Joshua T. Schmackers  
LA 404 Comprehensive Project  
Spring, 2008

# Extending Education Outdoors

## An Educational Landscape for the New Wauseon 3-8 Elementary

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LA 404 Comprehensive Project  
Spring, 2008

I would like to take the time to thank a few people for assisting me in this project and guiding me during the research and design process.

- o My thesis advisor Martha Hunt for her critiques and suggestions during both the project proposal and design processes.
- o Studio professor Ron Spangler for his guidance.
- o Landscape architect Stephan Howick for taking time out of his busy schedule to answer questions, supplying me with soil survey information, as well as design critique.
- o Fanning Howey Associates for supplying the survey files of the site.
- o Special thanks to Judy Kahle, Theresa Veitemeier, Stacy Beaverson, Bette Hudnutt, Dave Burkholder, and Marc Robinson, all of Wauseon Exempted Village Schools, for their ideas and willingness to aid me in generating ideas for the design.



This study reveals how an environmental education landscape can benefit children and adults in the community of Wauseon, Ohio. It explored the role outdoor environmental education plays in a school's curriculum and community prosperity, and it identified the physical elements that can be included in a successful outdoor environmental education landscape.

The study consisted of researching the philosophy of outdoor environmental education as well as case studies and strategies in designing outdoor education facilities. It also explored how an outdoor educational landscape can facilitate the needs of school children as well as adults of the community. The results of a survey of teachers and administrators helped formulate a supplementary list of amenities to include in an educational landscape to be utilized by a school.

The results of research and survey helped guide the design of an outdoor environmental education landscape for Wauseon 3-8 Elementary School located in Wauseon, Ohio. Site analysis was completed to determine the prime location for such facilities, and a master plan for the campus was generated. Main goals of the project included coherent circulation for the campus, utilization of natural features for outdoor education, and the employment of green technologies.

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While the traditional classroom setting for educating young children has seen its successes, there exists a growing concern for the affect the current educational system is having on them. Confining learning to the indoor classroom setting, often with poor lighting, ventilation, and acoustic qualities, creates poor learning environments for children and fails to cater to the psychological nature of how children learn. While modifications can be made to improve in these areas, there are some parts of the curriculum that are better served in an outdoor setting. Certainly within the last decade, education about the state of our environment has jumped to the head of the class within our society. While neither these issues, nor the concept of outdoor education are anything new, the idea of extending the educational opportunities for our youth to an outdoor setting makes sense in a new school facility.

Children being raised in urban and even suburban environments are major benefactors of outdoor education. These environments disconnect children from nature, leaving them to manufacture the realities of nature from books and television. Outdoor education fosters hands on, full sensory learning experiences where children can interact with real objects, rather than abstract, idealistic subject matter. Educating children in outdoor environments plants the seed for a passion to preserve our natural areas in a time where the "green" movement is picking up speed.

The site was first introduced to me during my summer internship at Fanning Howey Associates, Inc. The 3-8 school combines students from the Elm Street Elementary school and Burr Road Middle school into one building. There are approximately 1000 students in grades 3-8. My work with the project mainly involved circulation and layout logistics of the campus and how it related to the adjacent high school campus. The landscape development was limited due to the tight budget of the Wauseon Exempted Village School District. Due to the limited design considerations the landscape received, it is valuable to explore the value of outdoor educational landscapes in order to maximize the educational potential of the entire campus. It is time for schools to realize the full educational potential of their campuses and take advantage of that potential to improve the learning environment for its children.

The site lends itself to outdoor educational opportunities through existing natural features such as a wetland, woodland, and unique geologic features. By maximizing the educational potential of the landscape, the district can create a central hub of outdoor education at the new Wauseon 3-8 School for each of its schools. In addition, these amenities provide the town with a unique setting for community activities.



## Philosophy

Illustrating the value of outdoor educational spaces was the first step in creating the support to introduce outdoor learning into a public school's educational philosophy. An educational philosophy that finds value in learning outdoors is the basis for investing in a landscape that facilitates such activities.

Charles Mand's book, Outdoor Education, offers the idea that outdoor education has a positive effect on academic potential as well as "social and emotional development" (Mand preface v). Mand points out that outdoor learning experiences are essential for children, especially in urban and suburban environments where a disconnect is present between man and the natural world. His idea of a full sensory approach to education in addition to the aforementioned concepts had a significant impact on the design of Wauseon 3-8 School. In order to have success in a design of an educational landscape it was important to know what the outdoors has to offer the educational process. Such an understanding provided a framework for lessons that take advantage of a system of outdoor educational facilities as well as guided the design of such facilities.

Donald E. Hawkins and Dennis A. Vinton agree with Mand's notion of humans and nature being isolated and

disconnected from one another as they expressed in The Environmental Classroom. They refer to this disconnect as a crisis and advocate mending this through the environmental classroom. In addition, they explore the limitations of the traditional classroom and explain that by modeling an educational classroom after the English open school, which "seeks to encourage freedom of movement and self-motivated learning," students will benefit from such a learning environment (37). Existing educational practices such as the English open school is essential in building support for outdoor education spaces.

In his article, "The Great Outdoors," Rob Layton agrees that traditional classrooms constrain learning experiences and asserts that outdoor classrooms stimulate interest and curiosity among students. He sees the entire school campus as valuable space, not just the school building alone. The schoolyard is oftentimes neglected and seen as something that is too expensive to beautify and maintain. By utilizing the schoolyard as educational spaces and expanding the classroom to the outdoors the whole campus can be utilized for learning. Oftentimes outdoor educational facilities are less expensive than indoor classrooms and require less expensive technology, saving the school district money. Layton also explains that these facilities have the flexibility to serve community needs as well, making them all the more valuable.

## Practitioners & Projects

After building a case for the school to accept outdoor education into its educational philosophy and curriculum goals, it was appropriate to look toward case studies of designers and the outdoor education projects they have completed.

The Lake Washington Environmental Education complex, while not a school, has many attributes that a school has the ability to include on their site. The complex links environmental education with the city parks and reaches out to the community by educating passersby in an informal and passive way. Applying this strategy with the Wauseon school landscape facilitates the campus' ability to reach out to the community that Rob Layton mentioned. In the summer months when school is not in session the school's outdoor facilities are able to be fully utilized by the community.

The Camp Arroyo Environmental Education Camp is an educational camp during the school year and a summer camp during the summer months. While the emphasis of the summer camp is not placed upon environmental education, the project features state-of-the-art green design elements and the natural setting evokes an educational and restorative atmosphere (Camp Arroyo 2007). An

approach such as this was directly applied to the design of Wauseon 3-8 School in order to facilitate educational opportunities during the school year and more subtle environmental educational opportunities for adults and community members who use and therefore learn about the facilities and green technologies that were implemented in the design. This demonstrative educational approach is more compelling than an educational session about such technologies as those exposed to the green techniques and materials on "display" at the school can see them being used successfully in real life situations. The fact that these technologies function well in their own community, makes the viability of implementing such green practices elsewhere in the community all the more convincing.

Lessons in green technologies are of course a part of the educational experience for children as well. It is appropriate that such lessons are more basic and focus on the importance of living in an even partnership with the environment. The Puget Sound Environmental Learning Center does exactly that. The design of the facility was dictated by the needs of children and the environment. It employs the use of green technologies such as a living machine, recycled and green building materials, and green energy sources. The facility seeks to educate children about the earth on which they live, their place in it, and growing up to become stewards in their communities (McKernan).



This scope of environmental education will establish values in the children that can then be expanded upon as they mature into adulthood.

In her article, "Courtyard Oases," Sharon Gamson Danks explains the physical elements of a schoolyard that can facilitate these educational goals. Courtyards serving as ecological classrooms can include a mini farm/garden courtyard or a wildlife habitat courtyard. Interaction is achieved by the creation of an artistic space with colorful plantings and allowing children to add to the space through their own art installations. Additions by children engage them in the space and make them take an active role in their educational experience (Gamson Danks). Further investigation into how these facilities work in conjunction with the schools curriculum were valuable in the design of the educational landscape for Wauseon 3-8 School. An article in the Journal of Environmental Education entitled "Helping Teachers to Use Their School's Backyard as an Outdoor Classroom: A Report on the Watershed Learning Center Program" addresses the matter of how the Center works with school groups and their process of training teachers to use the facilities to teach lessons. The article presents an evaluation of the how the facility expanded its programs into surrounding schools, its effectiveness, and impact on the students. By evaluating the process described in this article I had a better understanding of how teachers

will utilize the facilities that were designed. By knowing these specifics I was able to design spaces that will ease the transition process for teachers.

## Strategies

In addition to case studies of projects a review of literature provided "how to" information regarding the creation of outdoor education environments and successfully teaching in said environments.

Designing Outdoor Environments for Children was an invaluable resource regarding the "how to's" of outdoor education facilities. This book details design, installation, and maintenance of sustainable children's outdoor learning environments and playgrounds. It provides tools for both designers and educators to use when creating outdoor learning landscapes.

An equally valuable resource was Teaching in the Outdoors, which has been widely used throughout the world in guiding the creation of outdoor educational facilities. While the book echoes many of its kind in its emphasis on mending the disconnect between man and the environment, it explains outdoor teaching techniques and makes suggestions regarding activities, themes, and physical elements that make up an outdoor educational facility.

Through a thorough analysis of these two resources I was able to generate a selection of ideas and viable options with what to include in the design of the Wauseon 3-8 School campus. From there I was able to sift through the ideas and select those that fit the site and the needs of the school.

Aiding me in the placement and design of the elements of the outdoor education campus was Cheryl Wagner's "Planning School Grounds for Outdoor Learning" and Sharon R. Stine's Landscapes for Learning: Creating Outdoor Environments for Youth and Children. Wagner highlights different types of spaces, considerations during the site selection and development process, as well as designing facilities for existing school sites. Stine reviews case studies, describes design concepts and offers design ideas. In addition, she adds ideas on how to cater to the adult supervision needs of the space. The guidelines these sources set forth guided me through the schematic design phase of the project. This provided a framework for which the design started and was built upon. Byron L. Ashbaugh's Planning a Nature Center also assisted me in this matter. Ashbaugh presents guidelines for organizing initial considerations of the site and appraising the value of natural resource.

Aiding in the development of the design was Maurice Phipps' "The Instructor and Experiential Education in the Outdoors." Phipps covers educational strategies, although

he emphasizes the goal of stimulating curiosity and self-motivation as well as the importance of an outdoor environment in experiential education when linked to communication, perception, arousal, and motivation (Phipps 8-16). In designing the finer details of the educational spaces and working out how the spaces were to be used, I had to consider Phipps' value of experiential education in order to design a space which facilitates an educational event that stimulates curiosity and self-motivation and is truly experiential.

## Conclusion

A review of the aforementioned materials clearly illustrates the benefits of outdoor education and its value in being adopted into the educational philosophy of schools. By studying relevant case studies and the ways designers successfully implement outdoor education in their projects, a great deal of information and inspiration was gained. It is also important to look at the strategies and collection of ideas from educators and designers that can serve to inspire the design process. By following this series of steps, a successful outdoor environmental education landscape design for Wauseon 3-8 Elementary School was formulated.



## Statement of Problem

How can an environmental education landscape benefit children and adults, what role does outdoor environmental education play in a school's curriculum and community prosperity, what physical elements must be included in a successful outdoor environmental education landscape, and what does an analysis of this contribute to the design of Wauseon 3-8 Elementary School?

## Subproblems

1. How does an environmental education landscape benefit children and adults?
2. What role does outdoor environmental education play in a school's curriculum and community prosperity?
3. What physical elements must be included in a successful outdoor environmental education landscape?
4. What does an analysis of the benefit, role, and physical elements of an outdoor environmental education landscape contribute to the design of Wauseon 3-8 School?

The significance of this project lies within the benefits it provides to the students and faculty of the Wauseon 3-8 School and to the community of Wauseon, Ohio. By utilizing the landscape, the school is able to significantly increase their educational potential by having a variety of spaces for learning experiences. It allows students and faculty to stretch the current boundaries of the educational atmosphere and engage in hands on, full sensory learning.

The community is able to utilize the school grounds as park space and learn from it as well. The sustainable storm water management implemented on site is one example of how the adult community can also learn from the school's landscape.

## Goals

### 1: Provide coherent circulation for the campus

Goal: Orient building

Goal: Organize circulation patterns

Goal: Consider relocation of elements (athletic fields, vocational agriculture facilities, etc.)

The first objective was to orient the building on the site and to organize circulation patterns that mesh well with the existing high school in order to create a cohesive and organized campus. This requires the relocation of elements such as athletic fields and vocational agriculture buildings and fields.

### 2: Utilize existing natural features for outdoor education facilities and experiences

Goal: Create outdoor laboratories using wetlands, wooded areas, and prairie

Goal: Create facilities and spaces to be used by students and the community

The overarching goal of the project was to utilize existing natural features such as the wetland and wooded areas for outdoor education facilities and experiences. The campus landscape also included other various outdoor learning gardens. Ohio educational standards were a major

influence on the design of the spaces and determined how they will be used. An emphasis was placed on facilitating the teaching of environmental and biological sciences, but spaces for the subjects of art, music, reading, physical education, etc. were also included. Some spaces are shared by different subject areas. The usability of the outdoor spaces during winter months and facilitating outdoor educational opportunities during these months was considered. Independent exterior buildings, such as a greenhouse and an environmental education center/laboratory, were ways to extend educational opportunities outside the main school building.

Opportunities to enhance the vocational agriculture facilities to promote alternatives to conventional agriculture were also considered. It was a goal to illustrate the importance of outdoor learning in our modern school facilities as well as to illustrate sustainable living practices. Ideally this project will serve as an example of things other school districts can do to implement on their own campuses. While these facilities may be geared largely toward students, it was desirable to design such outdoor spaces and facilities for use by the community for both educational and non-educational uses.



### 3: Societal Improvements

Goal: Illustrate importance of outdoor learning

Goal: Illustrate sustainable living practices/  
technologies

Goal: Employ LEED standards to serve as green  
technology/smart development demonstration

In addition to the aforementioned, the employment of LEED standards and other sustainable site initiative principals were part of the project, to illustrate what other school districts can do on their own campuses. Some practices suggested are the use of sustainable materials, on-site water management, native landscape vegetation, and the creation of natural habitat.

### Users

Intended users of the site include children in grades 3-8, faculty members, as well as parents and community members using the facilities during events. The facilities are also open to use by K-2 and 9-12 students and as a mini-field trip destination for students from neighboring towns. Users of the Wabash-Cannonball bikeway may also have the opportunity to utilize the prairie and woodland trails.

## Objectives

- Site the building and create cohesive circulation with the adjacent high school campus.
- Outdoor classrooms
  - garden classroom
  - art garden
  - storybook garden
  - wildlife habitat
  - environmental laboratory
  - alternative agriculture strategies
- Sustainable Sites Initiative principles/LEED principles
  - water infiltration/cleansing: rain garden/bio-filtration and purification garden, bioswale
  - rainwater harvesting
  - compost/vermiculture station to be used in partnership with garden courtyard
  - creation of natural habitat
  - native landscape plantings

## Description of Elements

### Garden Classroom:

**What is it?** This outdoor classroom includes a vegetable demonstration garden paired with a greenhouse, compost station, cistern, and a weather monitoring station.

**What is its purpose?** The greenhouse allows for students to start their own seeds in winter/early spring months, as well as keep exotic plants throughout the year for observation and study. The garden helps students understand biological concepts, cultural concepts, and teaches them real life skills. The compost station composts lunch waste from the cafeteria daily for use in the garden. This demonstrates the nutrient cycle and the role different organisms have in recycling waste in nature.

### Art Garden:

**What is it?** This includes space to display student art, create outdoor art, and natural materials that will inspire student art.

**What is its purpose?** It creates a sense of pride for students who display their art, expands the possibilities for art projects, allows for observation of patterns in the outdoors, and teaches children that many art media comes from nature, i.e. clay, pigments, etc.

### Storybook Garden:

**What is it?** This is a space where whole classes, small groups, or individual students can come to read or draw inspiration for writing assignments.

**What is its purpose?** It allows students to enjoy the weather while they read, as well as stimulate their imagination.

### Wildlife Habitat:

**What is it?** This consists of woodland, wetland, and meadow habitat several acres in size with a trail system linking each of the different habitat types.

**What is its purpose?** The trail serves as a revelatory walk to teach local history, ecological principles, and geologic principles by use of signage and other markers that point out significant features. It also facilitates the observation of nature and allows teachers to utilize a real natural setting for creative educational lessons.

### Environmental Laboratory:

**What is it?** This is a separate building located within the natural habitat area that houses various supplies for field experiments.

**What is its purpose?** It provides indoor space, equipment for experimentation and gathering spaces (indoor and outdoor) for instruction time.

### Alternative Agriculture Facilities:

**What is it?** This utilizes the Vocational Agriculture facilities of the High School (barns, animals, and agricultural fields).

**What is its purpose?** The design facilitates the teaching of rotational agriculture, rotational grazing, erosion control and the relation of rotational agriculture to Native Americans' agricultural practices.

### Sustainable Sites/LEED Principles:

**What is it?** Practices that manage storm water on site, create natural habitat, utilize food waste for fertilization of gardens, capture rain water for irrigation, and use native landscape plantings.

**What is its purpose?** While each element has educational opportunities for both children and adults, these practices minimize load on existing storm water infrastructure, provide habitat for wildlife, minimize garbage volume by composting lunch waste, eliminates the use of potable water for irrigation of landscape plantings, and reduces the need of irrigation and pesticide/herbicide use on landscape plantings.



## Introduction

This study explored the role of and revealed the benefit of outdoor environmental education spaces for children of the new Wauseon 3-8 Elementary school and the Wauseon community. It explored various options on how outdoor environmental education spaces are used in the school's curriculum and add to the prosperity of the community. The research included the historical method and descriptive surveys, literature review, study of existing environmental education landscapes, case studies, site analysis, research analysis, and application. Ultimately this information culminated into a design of the Wauseon 3-8 Elementary School landscape.

## Data Collection

The benefit of an environmental education landscape for school children and the rest of the Wauseon community were revealed through library research and a literature review of a collection of primary and secondary data from books, articles, and websites. Outdoor Education by Charles L. Mand, "The Great Outdoors" by Rob Layton, and The Environmental Classroom by Donald E. Hawkins and Dennis A. Vinton were especially helpful in exploring the benefits of educational landscapes.

The physical elements that are included in a successful outdoor environmental education landscape were determined by historical analysis, a descriptive questionnaire given to faculty and administration members of the Wauseon School District, and case study investigation (refer to Appendix A for questionnaire). Teaching in the Outdoors by Donald R Hammerman, and Elizabeth L William M. and Designing Outdoor Environments for Children by Mary Taylor Hague, Erin Jordan Knight, Gina K.McLellan, and Tai Lolly were both used as supplemental pieces of literature that cover physical elements of outdoor educational landscapes that have had success.

Contact information was gathered through the school district's website, and a questionnaire was e-mailed to the faculty and administration.

By comparing suggestions from faculty and administrators to the content of the literature, I found elements that have been used with success that will provide the school with the amenities they are looking for in an educational landscape.

Survey files of the site and the design of the school building were supplied by Fanning Howey Associates, Inc.

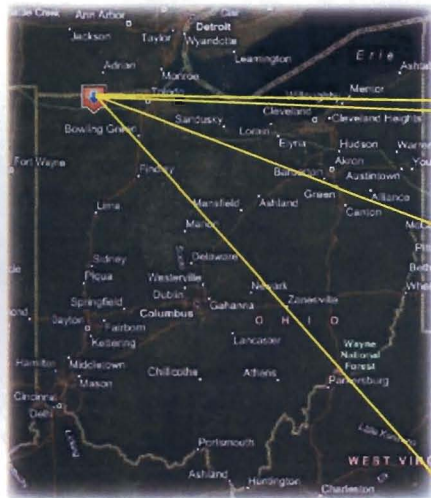
## Data Collection

The collected data was analyzed while site analysis was completed. The data was then organized into related categories, the information was cross referenced with the results of the site analysis, and feasible ideas and features of outdoor educational landscapes were selected. The curriculum and educational standards were influential in determining the form and capacity to which the outdoor education spaces were developed. The results of the site analysis determined the placement of each educational space.



## Location

The site is located in Wauseon, Ohio, the seat of Fulton County. Established in 1854 by J.H. Sargent, the town was dubbed Wauseon after the name of the Potawatomi Chief of the Ottawa Nation inhabiting the region during colonial settlement of the Ohio territory. Today, Wauseon is a predominantly agricultural based town with a population of 7000 residents. It boasts a generous park system of eight parks totaling seventy three acres. Notable cities in the region include Toledo and Bowling Green.



## Site

Currently, an agricultural field, the site is bordered by Wauseon High School, athletic fields, and vocational agriculture education facilities to the west, agricultural fields to the east, a drainage ditch and the Norfolk Southern Railroad to the south, and a wooded area containing a wetland, the Wabash Cannonball bikeway, and a residential neighborhood to the north.



**Figure 1: Vicinity Map** 1)Wuaseon High School 2)Board of Education 3)Leggett St. Primary School 4) Elm St. Elementary School 5) Burr Rd. Middle School (Site of Wauseon 3-8 is highlighted in yellow).





Figure 2: Site Aerial Map (No Scale)

- Wauseon High School
- Wauseon 3-8 Site



The soil is composed of two general soil compositions. One is deep sandy silt while the other is a dense clay material. The topography undulates with signature features of steep slopes and natural drainage ways. Field tile is present underground which serves to prevent flooding.

At one time the site was a glacial beach, explaining the sandy soils on the site. The site lies within the Maumee Sand Plains which are described as a lacustrine plain mantled by sand. This includes low dunes, inter-dunal pans, beach ridges, and sand sheets of glacial lakeshores. The soils are well to poorly drained and consist of Late Wisconsinan wave planed clay till and lacustrine deposits. Vegetation characteristic of this soil include beech-sugar maple forests, elm-ash forests, deciduous swamp, white oak-black oak savannas, wet prairies, and coastal marshes (Ohio Department of Natural Resources).

This geologic history of the site lends itself well to outdoor education opportunities. Specifically, there was an opportunity to restore these native vegetative features and create a revelatory landscape in which the history of the site unfolds before the students' eyes.

## GLACIAL MAP OF OHIO

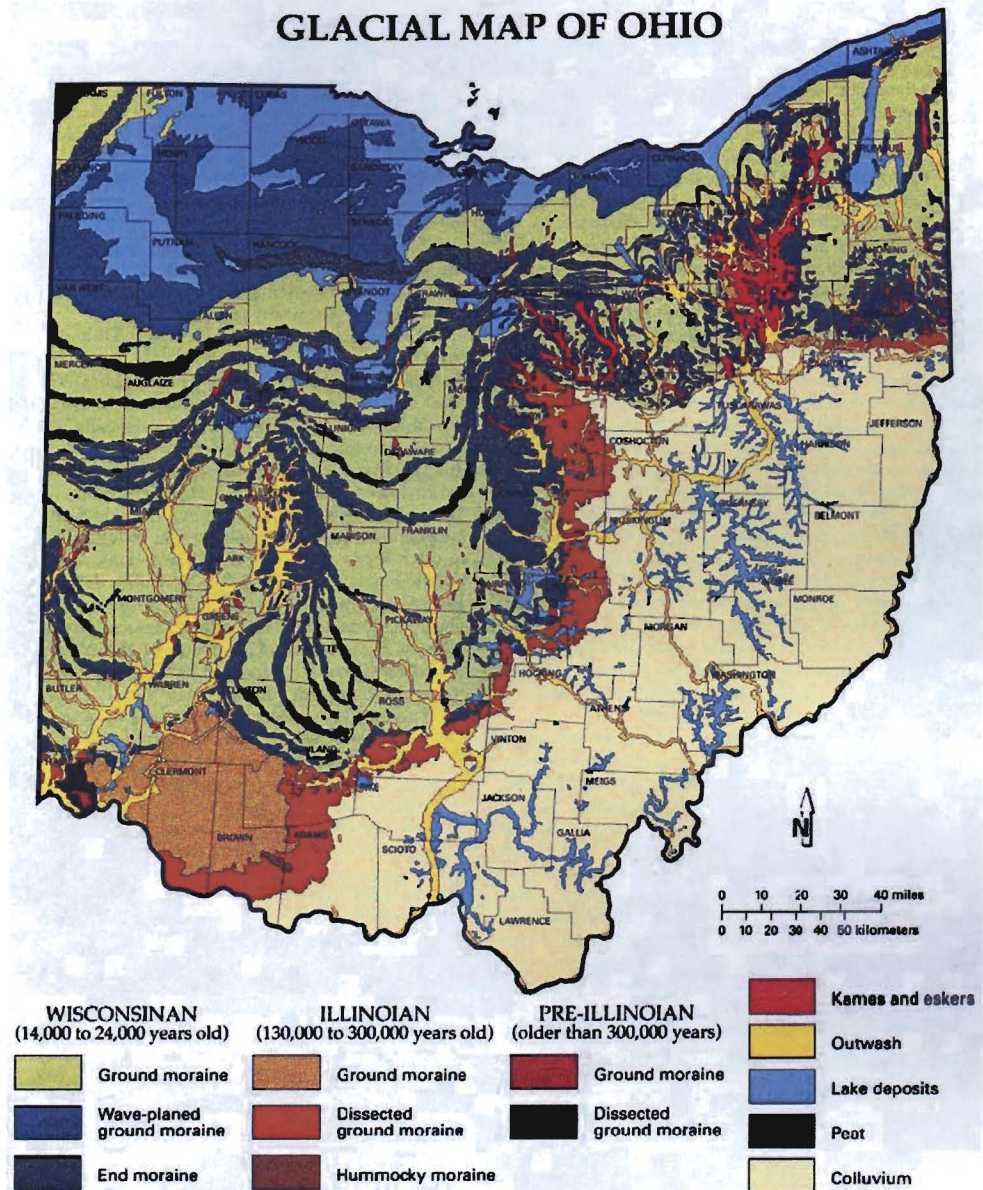


Figure 3: Glacial Map of Ohio



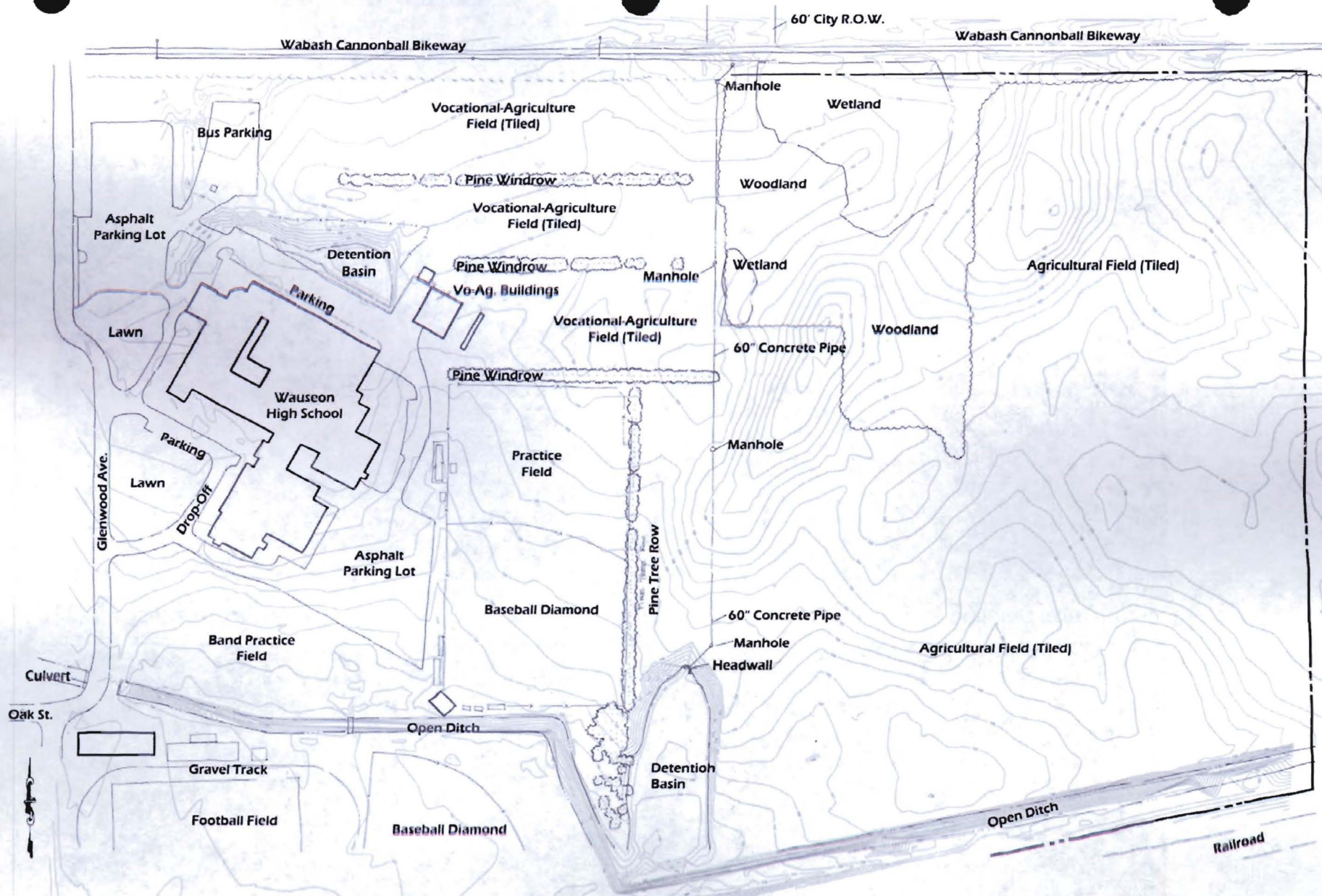


Figure 4: Site Inventory (No Scale)





**Figure 5: Aerial Key Map**



**Figure 6: View of high school building from the site**

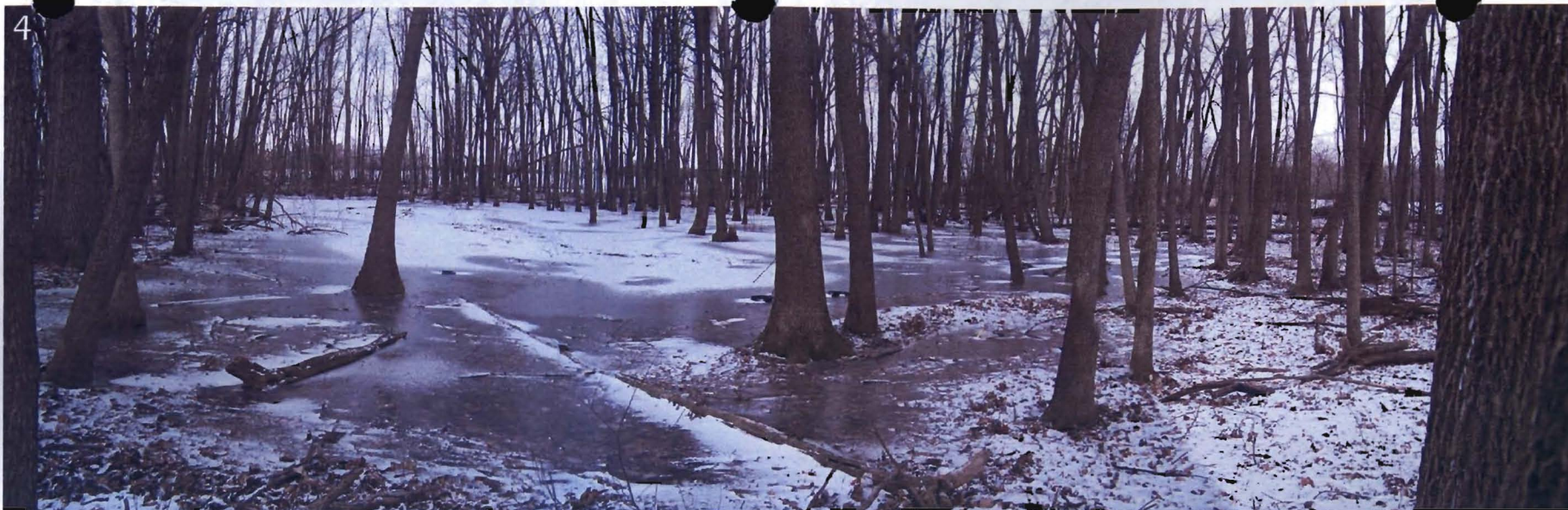


**Figure 7: View of access road route from Linfoot St. north of the site**



**Figure 8: View of Wabash Cannonball bikeway**





**Figure 9:** Panoramic view of the large category 2 wooded wetland in the northern portion of the woodland



**Figure 10:** Panoramic view of the site from the eastern property line looking west toward the high school



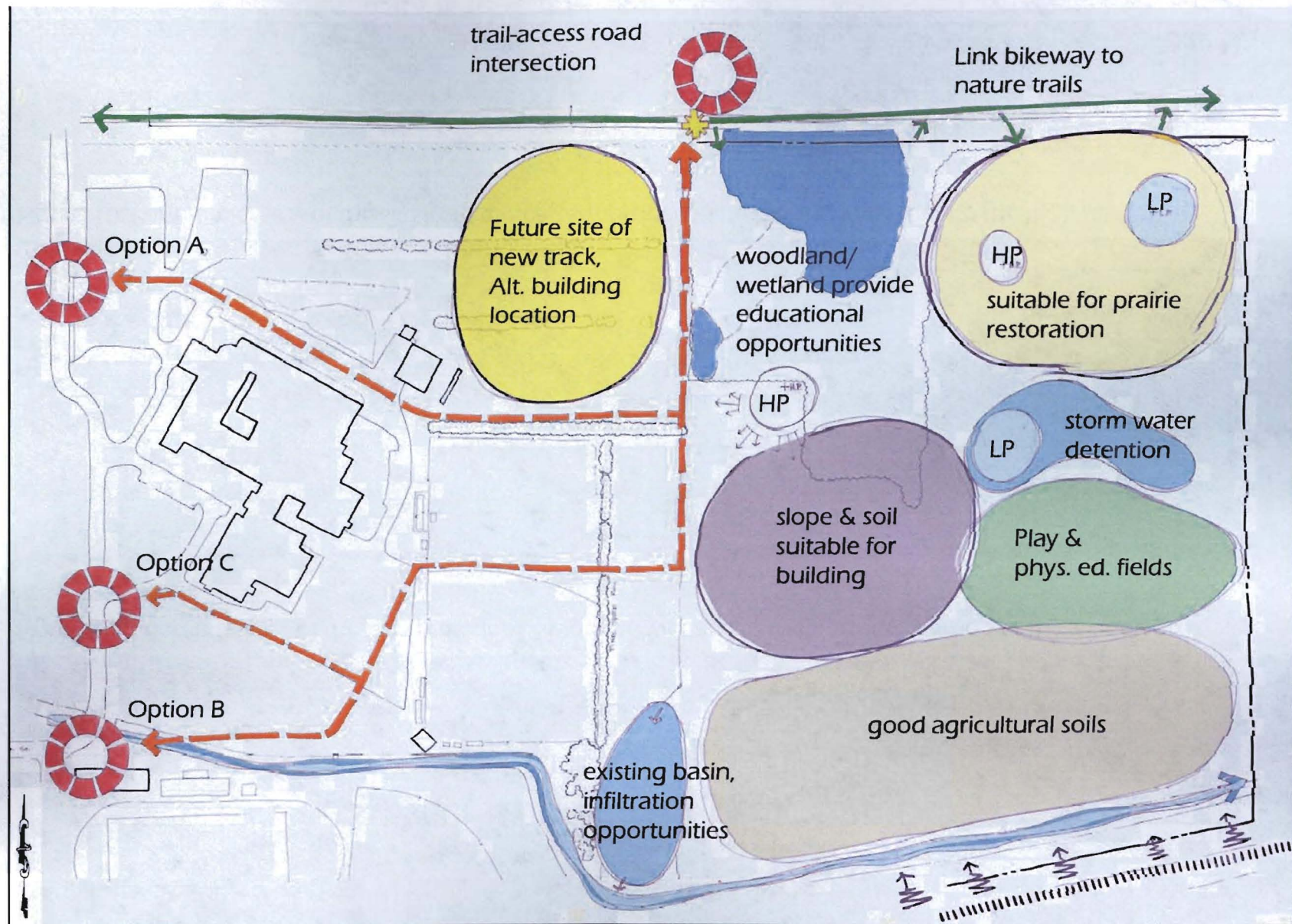


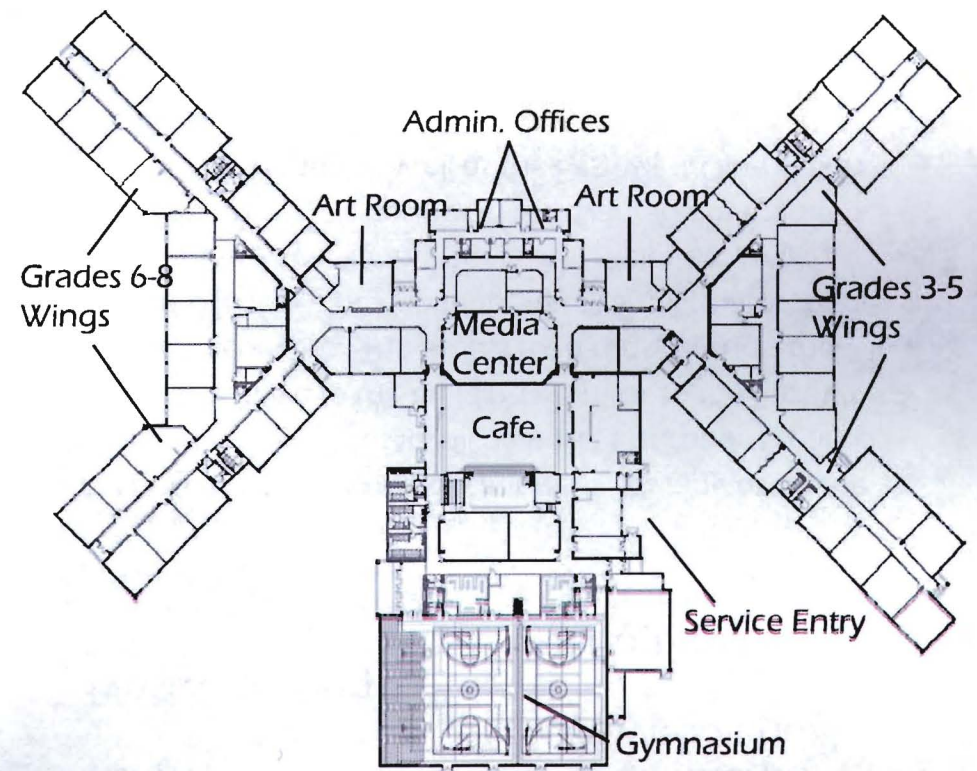
Figure 11: Site Analysis (No Scale)



There were two prime locations for placement of the building. However, the school district also has plans to build a new track and field facility, and taking that into account affected where the building was best located.

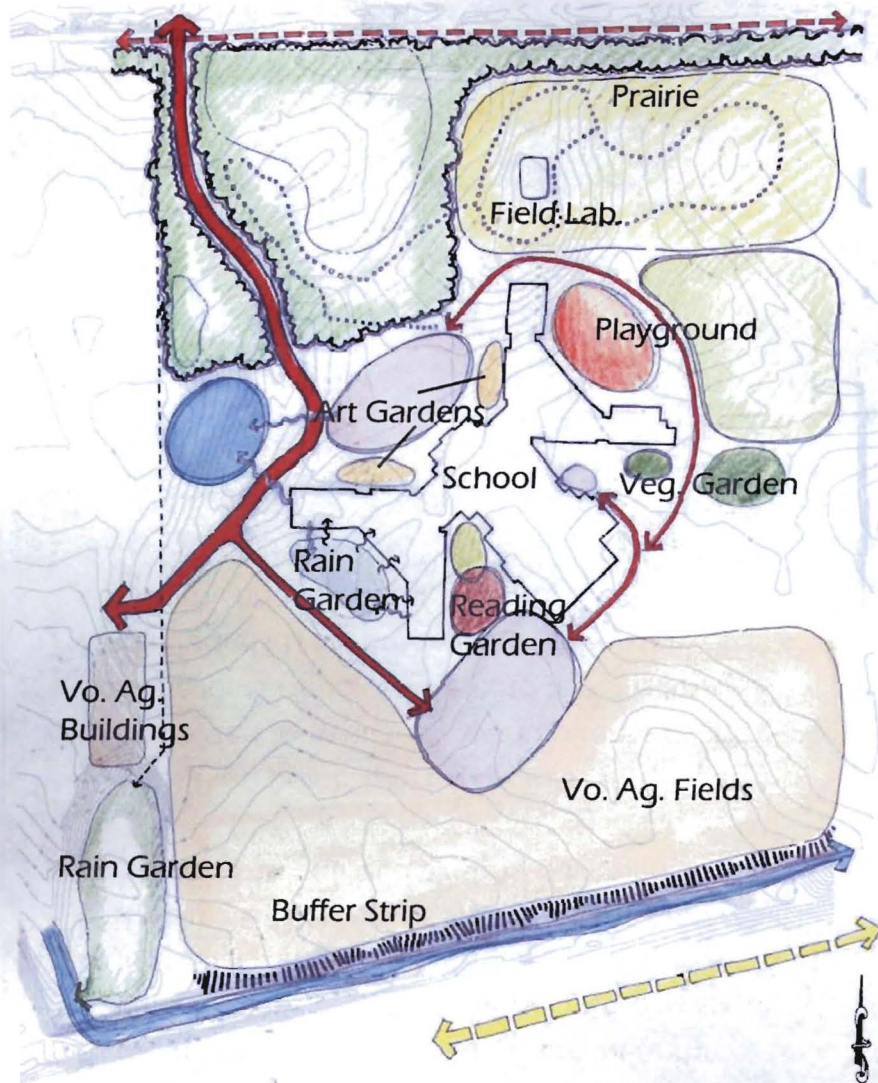
A 60' right of way north of the site allows for access to the school from the north. There were three options for connecting the school to the existing high school campus and to the section of town west of the site. Option A was chosen as the preferable connection as it utilized existing pavement.

Various high points and low points were located to be utilized for wetlands, water retention, and possible lookout points. Refer to the Site Analysis Map (Figure 11) for other elements considered during the analysis of the site.



**Figure 12: Floorplan (No Scale)** Floorplan of the new Wauseon 3-8 school building as designed by Fanning Howey Associates, Inc.





**Figure 13: NE-SW Building Orientation (No Scale)**  
 Building will be built to this orientation per Fanning Howey Associates, Inc.

## PROS

1. Promotes minimal grading
2. Large Vo-Ag. field
3. Passive cooling

## CONS

1. Small habitat area
2. Removal of large quantity of woodland
3. Short trail system

This concept provides an educational landscape using the layout of the building as it will be built. Educational garden placement relative to the building is similar to the East West Orientation concept. The access road runs through the woodland. The prairie habitat is significantly smaller in this concept, but the vocational agriculture fields are larger. Overall, this concept does not take advantage of the site's educational potential as well as the East West Orientation concept.



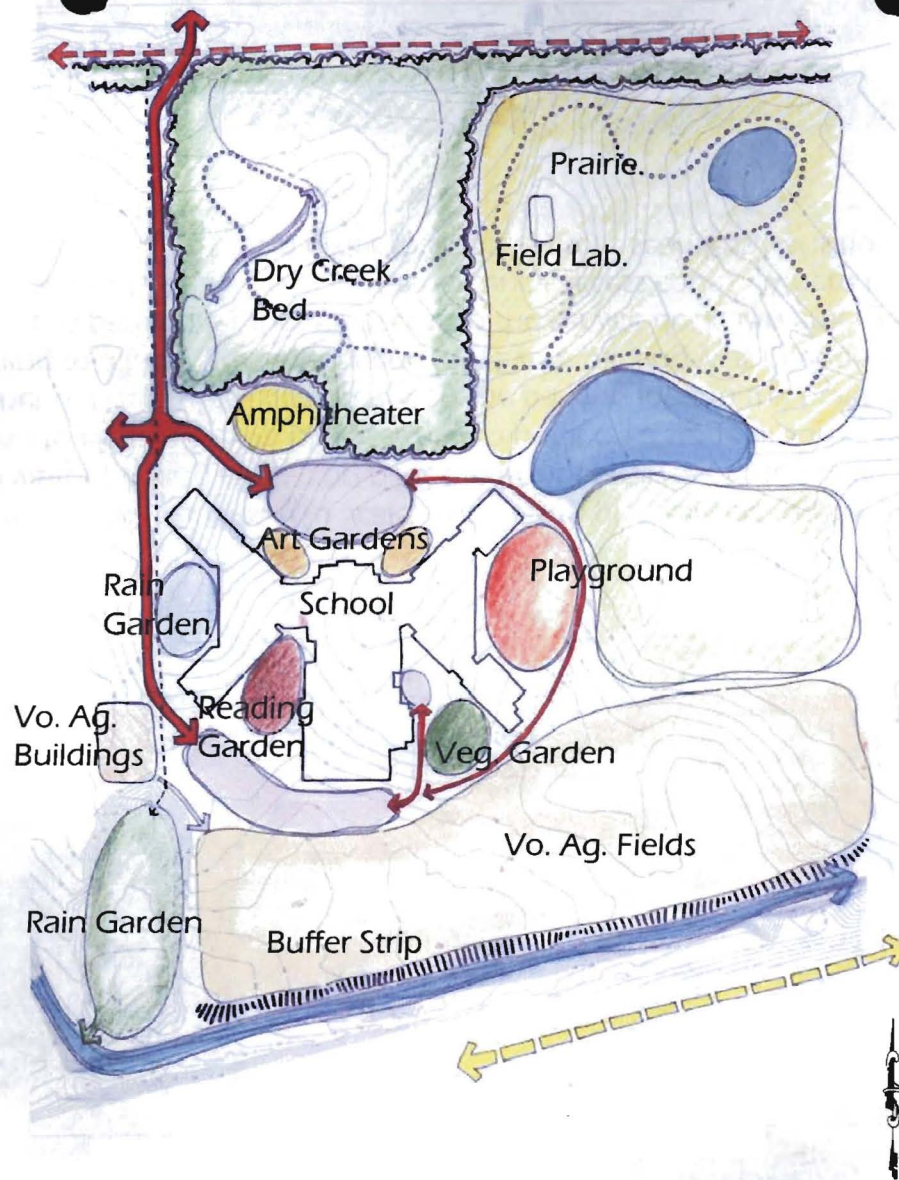


Figure 14: East West Building Orientation (No Scale)

## PROS

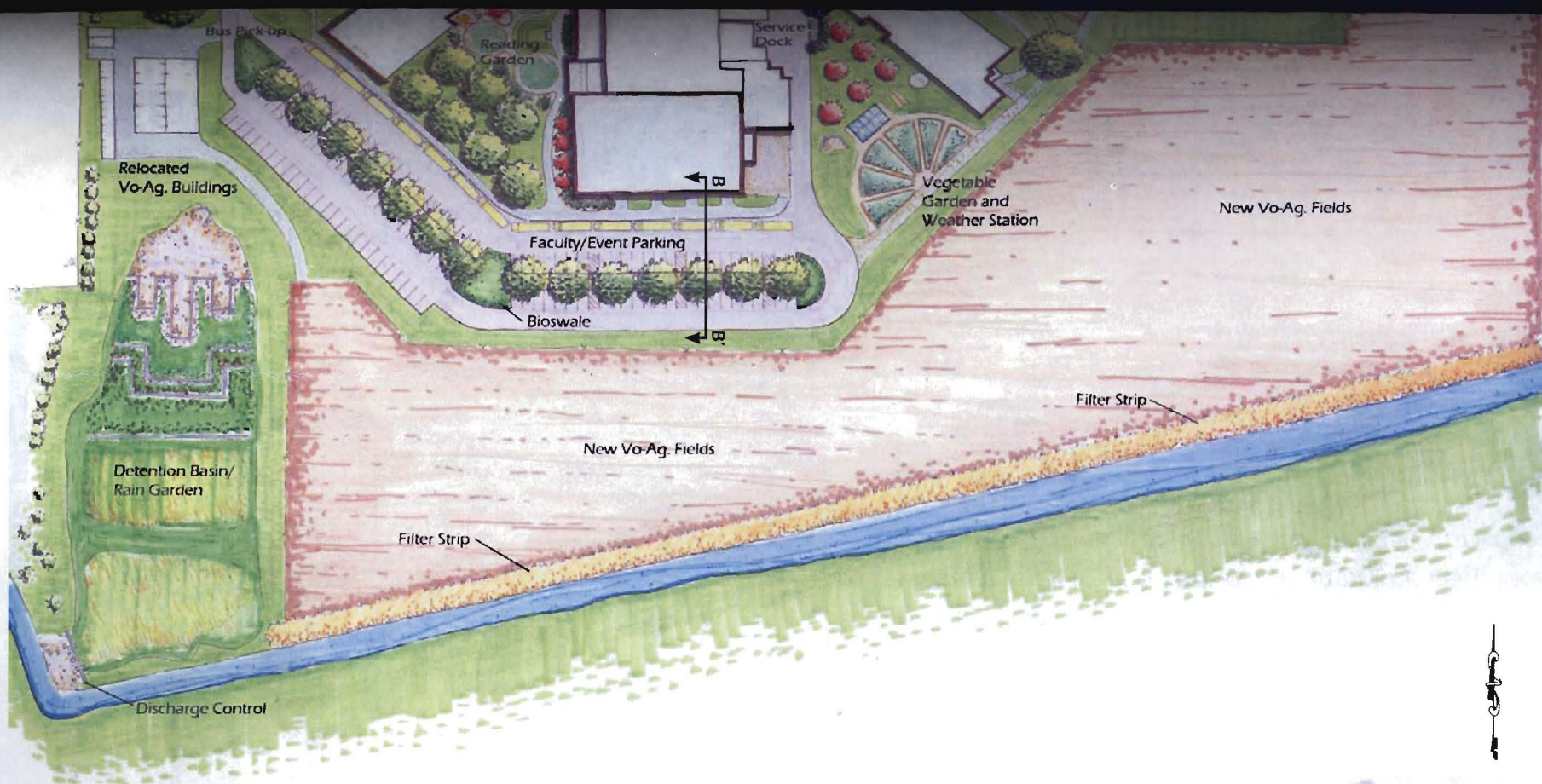
1. Ample habitat acreage
2. Access road bypasses wetland
3. Minimal removal of woodland

## CONS

1. May require a large amount of grading
2. Less acreage for Vo-Ag. fields
3. Trail/Road intersection at an angle

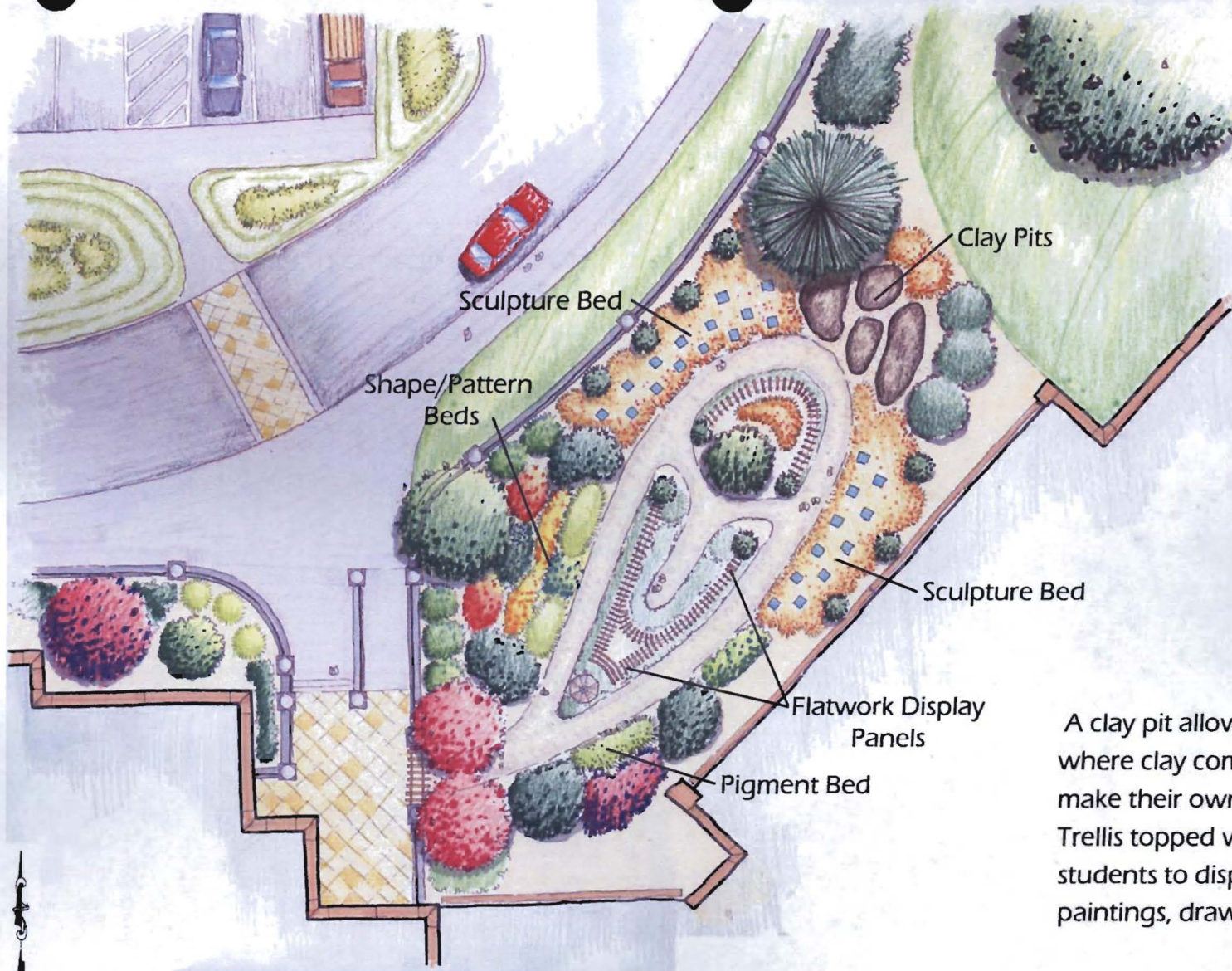
This concept sites the building facing the woodland and the educational gardens are placed in suitable locations close to the building. The access road follows the western edge of the woodland. There is ample prairie habitat with a new wetland and retention pond. An amphitheater is located just south of the woodland to provide space for educational performances and community events.





**Figure 15: Master Plan (No Scale)** The master plan reflects further development of the East West Orientation concept. Faculty and visitor parking is located near the front entrance of the building. A low retaining wall graces the entry to the school and serves to elevate the building slightly to put it on a stage of sorts and to create a terrace for the art gardens. It also serves to further define a separation between the parking lot and the building. An access lane wraps around the west side of the school leading to a faculty/event parking lot. Event parking was needed to facilitate high school sporting events in the gymnasium. From this parking lot there is access to the service dock. An emergency access path is required to encircle the rest of the building per Ohio Fire Marshall emergency access codes. Where the emergency path runs past the playground, the path is made of a grass pave system in order to create a more seamless transition from the structured play areas to the play fields.





There are two art gardens, one flanking each entrance to the building. Both are used for displaying student art and creating a sense of pride for the student's art work. The gardens include plant material that can be studied for shapes, pattern, and symmetry. Some parts of the plants can be used to create art, such as seed bearing plants and those that contain pigments.

A clay pit allows students to learn where clay comes from and how to make their own clay for sculpture. Trellis topped wire display panels allow students to display flatwork such as paintings, drawings, etchings, etc.

Figure 16: East Entry Art Garden (No Scale)





**Figure 17: East Entry Art Garden Perspective.** This perspective gives a view of the flatwork display panels and the sculpture beds. The pottery is protected from the elements by a glass encasement. At night the glass boxes light up to enhance the mood of the art garden.





**Figure 18: Section A-A' West Entry Art Garden.** This section shows the low retaining wall that enhances the entry experience into the school. It is easy to see how the slight elevation defines the art garden and enhances its sense of space.



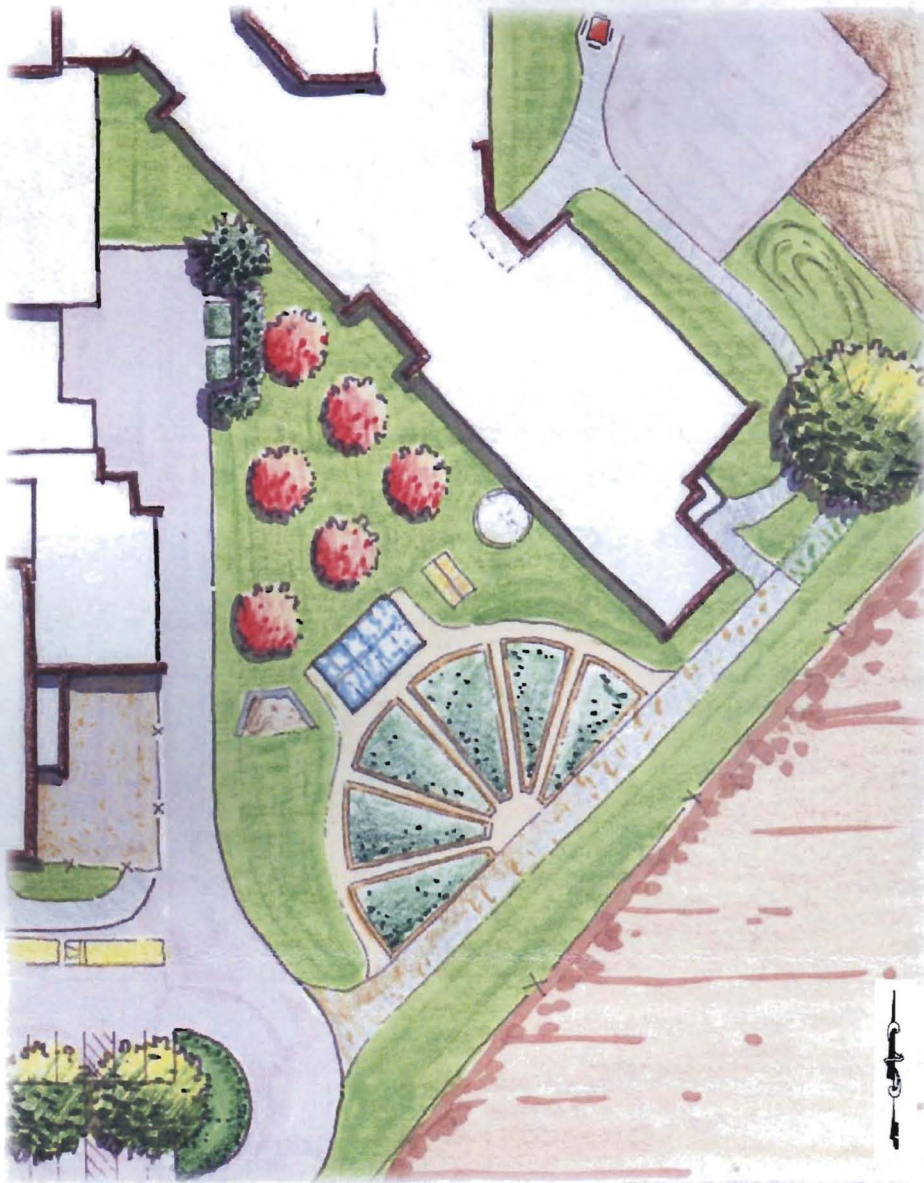


Figure 19: Vegetable Garden Classroom (No Scale)

The vegetable gardens includes six raised beds, one for each grade level, and is paired with a small orchard and a greenhouse for gardening lessons in the winter and early spring. A compost/vermiculture station allows students to utilize lunch waste for fertilization of the gardens. A cistern allows students to harvest water for fertilization of the vegetables after planting and during dry spells. A weather station is paired with the vegetable garden to allow students to learn about the tools used to monitor weather, and how weather affects their gardening efforts.





Figure 20: Vegetable Garden Classroom Perspective





**Figure 21: Revelatory Trail & Native Habitat Restoration (No Scale)**

The prairie habitat is full of native vegetation and provides the opportunity to study plant life, animal life and other biological concepts. Located within the prairie is a wetland and retention pond. The wetland provides a counterpart to the existing wooded wetland and allows for comparison and contrast studies. The pond serves as water management for the site while being placed in a natural setting. Two council rings, one in each the woodland and prairie allow

for stopping points and instructional space for teachers and students. The environmental laboratory, located in the prairie habitat, is placed on a knoll to provide overlook of the prairie. Inside it houses equipment for conducting experiments on materials brought in from the natural habitat.

The revelatory trail winds through both the woodland and prairie, following the topography in order to create walk-able trails. Along the trails are signage that point out geologic, plant, and animal features along with others. This system of signage works to reveal the landscape to visitors as they traverse the paths.

The participants are able to see how the landscape has changed throughout

history and give them reasons for why things are the way they are today. The trail also makes connections with the bikeway to the north to allow the community to utilize the trail system and habitat space at their leisure





Figure 22: Revelatory Trail at the Prairie Wetland





**Figure 23: Wooded Wetland Council Ring.** The council ring serves as a resting spot and an instructional outdoor classroom in close proximity to the existing wetland. Binoculars placed along the trail allow students to view all parts of the wetland.

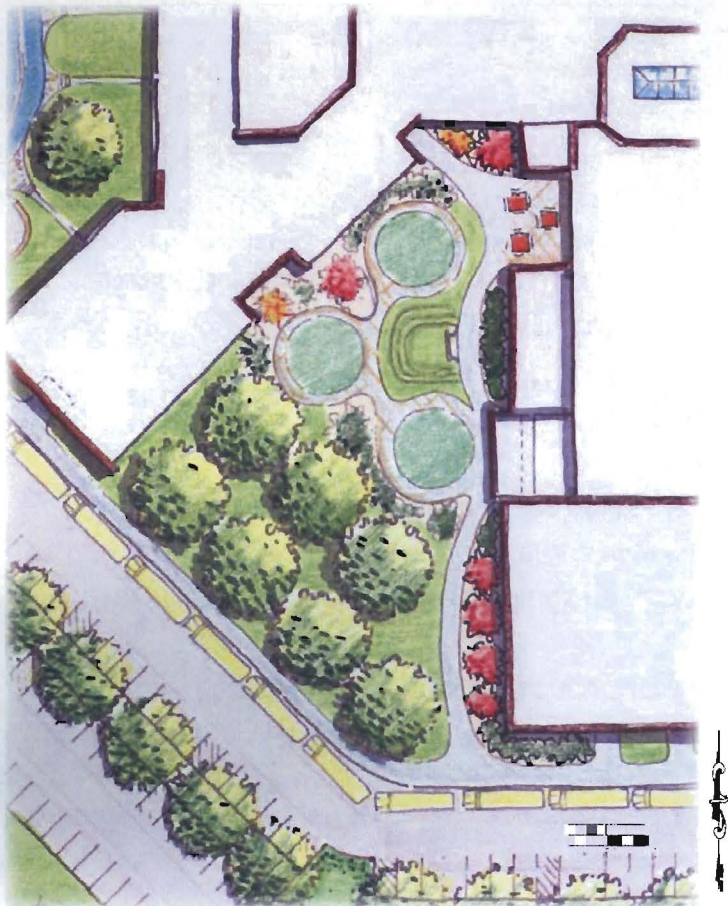




**Figure 23: Vocational Agriculture Facilities. (No Scale)**

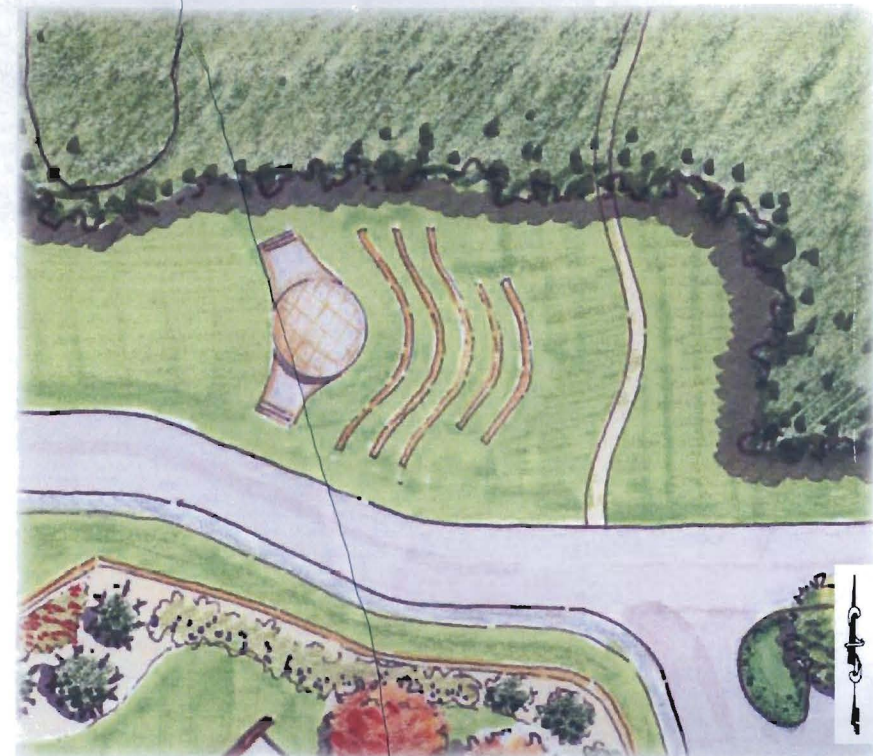
The vocational agriculture facilities have been relocated as a new track and field facility is built on their current location. Nine acres of cropland hugs the bottom of the property. A fifteen foot wide vegetated buffer has been planted along the edge of the creek to prevent erosion of topsoil. The proximity to the new 3-8 school will allow faculty to utilize the animal facilities for educational opportunities.





**Figure 25: Reading Garden**

The reading garden is divided into several spaces allowing multiple groups and individual users to use the space harmoniously. An earth berm planted with a grove of trees buffers the parking lot from the reading garden. The garden also serves as a place for outdoor lunch breaks.



**Figure 26: Amphitheater (No Scale)**

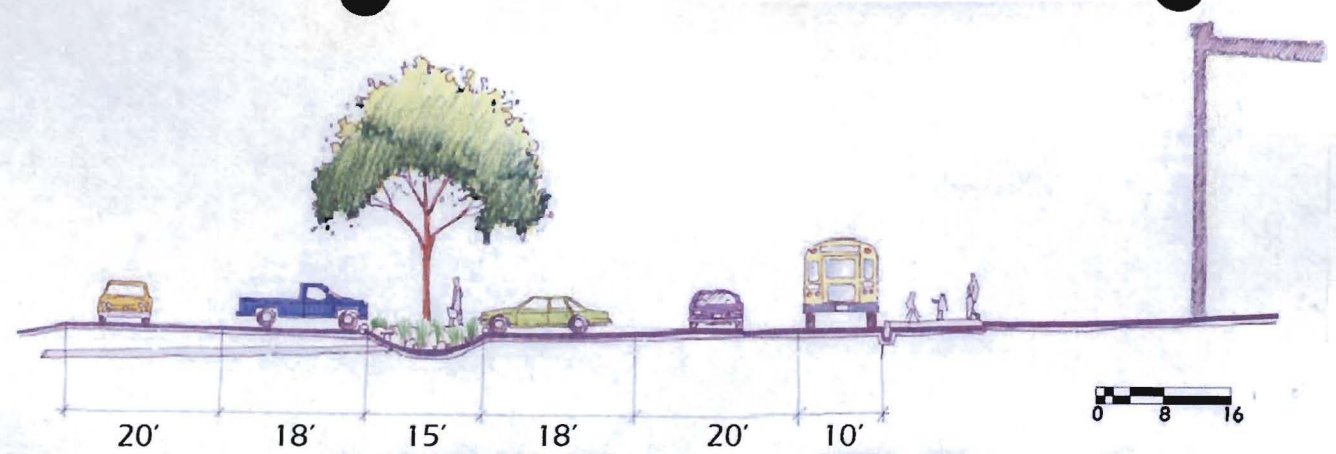
The amphitheater is notched out of an existing slope between the visitor parking lot and the woodland. The proximity to the parking lot is ideal for easy access, while the woodland gives the amphitheater a sense of space. It can facilitate small music recitals, but is large enough to seat those attending a community meeting.



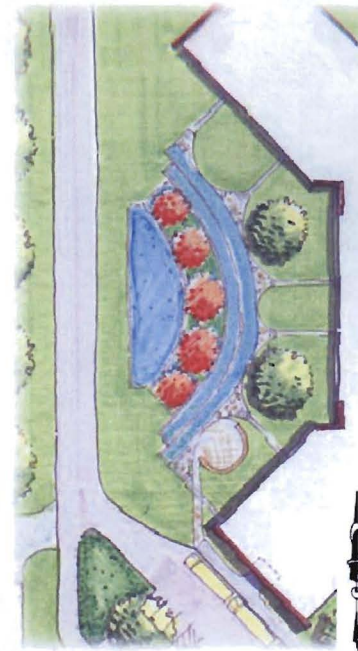
The rain garden to the west of the school manages a portion of roof runoff while creating an aesthetically pleasing landscape feature for that side of the school. Ideally, warm breezes from the Southwest will sweep across the water in the rain garden and cool the western portion of the building. The rain garden acts as an educational tool for both students and the community regarding storm water issues.

Bioswales are placed as medians in both parking areas. They effectively manage storm water generated by the impervious surface of the asphalt. This also decreases the load placed on the existing storm water system. Trees placed in the bioswales provide some shade for the parking areas.

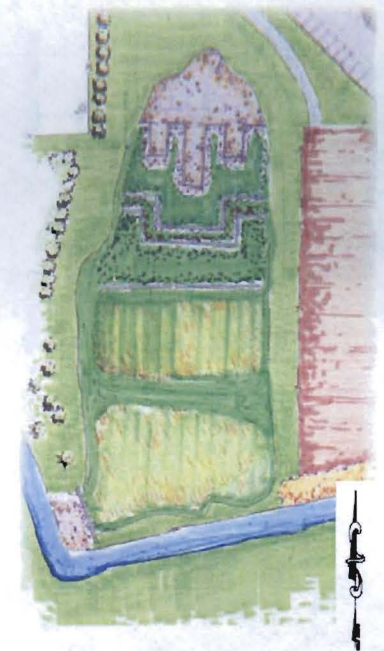
The existing detention basin has been converted into a rain garden detention basin, allowing sediment and particulates to be filtered out before it is discharged into the creek to the south. Rock beds allow for large particulates to filter out and as the beds fill they overflow onto vegetated beds. This series of weirs and check dams slow the flow of the water and allows the plants and microorganisms to cleanse the water.



**Figure 27: Section B-B' Visitor Parking Lot Bioswale.**



**Figure 28: Rain Garden (No Scale).**



**Figure 29: Infiltration Detention Basin (No Scale).**







The goal of this project was to utilize existing landscape features of a school site to create an educational landscape in which learning is extended beyond the walls of the school building itself. After researching the concept of outdoor education and realizing its benefits, it was easy to see the importance of this project to the community of Wauseon, Ohio as well as to all schools who wish to enhance the educational value of their school campuses.

This design was a direct result of thorough site analysis and an investigation into the geologic history of the site. Both proved to be an inspiration for many of the spaces created for Wauseon 3-8 School. By reviewing case studies, reading literature on outdoor educational spaces, and with feedback from faculty of the school, I was able to choose appropriate educational spaces for this school. Additionally, the interest in involving the community in the educational opportunities allows the school campus to be used for public education and events as well.

Upon completion of this project, it is evident that such facilities are an essential part of maximizing the educational potential of a school's campus and its community. Unfortunately, a reality of building schools, especially public schools, is the financial constraints that are present. However, it is valuable to continue to explore outdoor educational opportunities because of the increase in the ability for learning to take place as a result of the excitement for learning it creates in students.



Wauseon Administrators and Faculty:

My name is Josh Schmackers and I am currently in my last semester studying Landscape Architecture at Ball State University. This past summer, I was an intern for Fanning Howey Associates, Inc. of Celina, Ohio. The firm is designing the new Wauseon 3-8 School. During my time, I worked extensively on the site design. As part of my last semester of undergraduate studies, I am working on an independent, comprehensive design project.

For my project, I will utilize my knowledge of the new Wauseon 3-8 School to design an outdoor learning landscape. I had an entire class last semester devoted to researching my topic and discovering the benefits of educating students in the outdoors. However, I do not have the perspective of educational faculty; therefore I would like to ask for your opinions. Below is a list of ideas that I am considering to include in my design, as well as a short description of each idea.

**1. GARDEN CLASSROOM**

**What is it?** This outdoor classroom includes a vegetable demonstration garden paired with a greenhouse and compost station.

**What is its purpose?** The greenhouse allows for students to start their own seeds in winter/early spring months, as well as keep exotic plants throughout the year for observation and study. The garden will help students understand biological concepts, cultural concepts, and teach them real life skills. The compost station will compost lunch waste from the cafeteria daily for use in the garden. This demonstrates the nutrient cycle and the role different organisms have in recycling waste in nature.

**2. ART GARDEN**

**What is it?** This includes space to display student art, create outdoor art, and natural materials that will inspire student art.

**What is its purpose?** It will create a sense of pride for students who display their art, expand the possibilities for art projects, allow for observation of patterns in the outdoors, and teach children that many art media comes from nature, i.e. clay, pigments, etc.

**3. STORYBOOK GARDEN**

**What is it?** This will be a space where whole classes, small groups, or individual students can come to read or draw inspiration for writing assignments.

**What is its purpose?** It will allow students to enjoy the weather while they read, as well as stimulate their imagination.

**4. WILDLIFE HABITAT**

**What is it?** This consists of woodland, wetland, and meadow habitat several acres in size with a trail system linking each of the different habitat types.



**What is its purpose?** The trail would serve as a revelatory walk to teach local history, ecological principles, and geologic principles by use of signage and other markers that point out significant features. It will also facilitate the observation of nature and allow for teachers to utilize a real natural setting for creative educational lessons.

**5. ENVIRONMENTAL LABORATORY**

**What is it?** This is a separate building located within the natural habitat area that houses various supplies for field experiments.

**What is its purpose?** It will provide indoor space, equipment for experimentation and gathering spaces (indoor and outdoor) for instruction time.

**6. ALTERNATIVE AGRICULTURE METHODS**

**What is it?** This will utilize the Vocational Agriculture facilities of the High School (barns, animals, and agricultural fields).

**What is its purpose?** The design will facilitate the teaching of rotational agriculture, rotational grazing, erosion control and the relation of rotational agriculture to Native Americans' agricultural practices.

Please consider the following questions in your response.

1. Which outdoor educational feature facilitates the teaching of the most concepts of the Ohio Educational Standards?
2. Which of the above ideas do you like best?
3. Which has the most flexibility for lessons from several subjects?
4. Do you have other ideas for outdoor educational spaces that you feel would be a great addition to the 3-8 school?

Again, I appreciate any feedback you can provide and please feel free to contact me at [jtschmacks@gmail.com](mailto:jtschmacks@gmail.com) with any questions that you may have or if you would like more clarification on the above stated design ideas. Your suggestions are very valuable to me. Thank you for your help and your time.

Sincerely,

Josh Schmackers  
Department of Landscape Architecture  
Ball State University  
Muncie, IN 47306  
e-mail: [jtschmacks@gmail.com](mailto:jtschmacks@gmail.com)



## Questionnaire Results

### Correspondence 1

January 25, 2008

Judy Kahle wrote:

*Hello.*

*I am the junior high art teacher. An art garden is an interesting idea. What would it include? How would it protect the art displayed there?*

*I once did fantasy flowers that were displayed outside in a protected courtyard. Wind was a problem and a destructive force. How would you deal with something like that?*

### Correspondence 2

January 28, 2008

Theresa Vietmeier wrote:

*Josh,*

*I think all the ideas are great, particularly the art, garden, and storybook gardens. I am just curious about the square footage for each of the gardens. Also, I know this is probably a stretch, but since I teach music, I would love to see an outdoor amphitheater. Basically, I was thinking of a stage area for outdoor performances, drama productions, etc. With money being a top priority, I don't anticipate this being a priority, but hey, you asked!*

*Thanks,  
Theresa Vietmeier*

January 28, 2008

Joshua Schmackers reply to Theresa Vietmeier

*Theresa,*

*At this point, this project is not a part of Fanning Howey's design services. It is only for the project for my class at Ball State. However, I do plan on contacting Marc Robinson to see if he would be interested in hearing a presentation after I complete my design and perhaps saving it for possible future projects for the school.*

*An outdoor amphitheater is a good idea and I am interested to know a little more about your ideas for it. Would it be mostly geared toward your ability to use it for music classes? Who would be using it for outdoor performances and drama productions? How much seating space did you have in mind?*

*Currently, my design is in its very early stages and sizing of each space is not narrowed down yet, but if I could share the numbers with you and get your opinion on appropriate size when I do get that narrowed down, that would be great!*

*Thank you for your ideas and response.*

*Josh*

January 28, 2008

Theresa Vietmeier to Josh Schmackers

*Josh,*

*I believe something such as this has multiple practical uses: drama*



*productions, live music (electrical hookup would be a must), outdoor meetings, concerts, any type of situation that requires a presentation format - auctions, dance productions, etc. I think the possibilities are endless. Seating could range from a few classes to a large area. Having the audience seated on a hill looking down onto the stage would be ideal, though I imagine this is costly. Just a few thoughts. All the outdoor gardens have huge creative possibilities. Good luck with your project!*

*Thanks,  
Theresa Vietmeier*

### **Correspondence 3**

January 30, 2008

Stacy Beaverson to Josh Schmackers

*Hi Joshua,*

*All of the ideas are very good but to answer your questions:*

*1. I feel the storybook garden hits the most concepts under the Ohio Educational Standards. The focus being so heavily on writing this atmosphere would create a fantastic avenue for students to be creative and motivated to write or read.*

*2. Storybook Garden/Art garden*

*3. The storybook garden provides the most flexibility for multiple subject areas.*

*4. I have always thought there was a need for a place such as your examples here at Burr Road. They are fantastic and you should give*

*yourself a pat on the back. All of these ideas would be a welcomed addition in Wauseon.*

*Thanks for asking,  
Stacy Beaverson*

### **Correspondence 4**

January 30, 2008

Bette Hudnutt to Josh Schmackers

*1. I believe the Garden Classroom would meet the most concepts of the Ohio Standards. The Wildlife Habitat would be a close second choice.*

*2. I like the two above mentioned gardens because they meet the needs of the teachers and students in Ohio. The others are wonderful but the Garden Classroom is the one I like the best because it would be the most beneficial.*

*3. The Wildlife Habitat has the most flexibility to stretch over several subjects.*

*4. I think you have covered most of the ideas that would benefit several curriculum areas. I especially like the Art Garden and the Storybook Garden and would hope they too could be incorporated into any educational setting.*







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